LAB GUIDE

Lab: Deploy an Azure Kubernetes Service (AKS) cluster using the Azure portal

Learning Objectives

```
- How to deploy an AKS cluster using the Azure portal.
```

Pre-requisites

- Microsoft Azure Account: You'll need a valid and active Azure account for the Azure labs.

Length

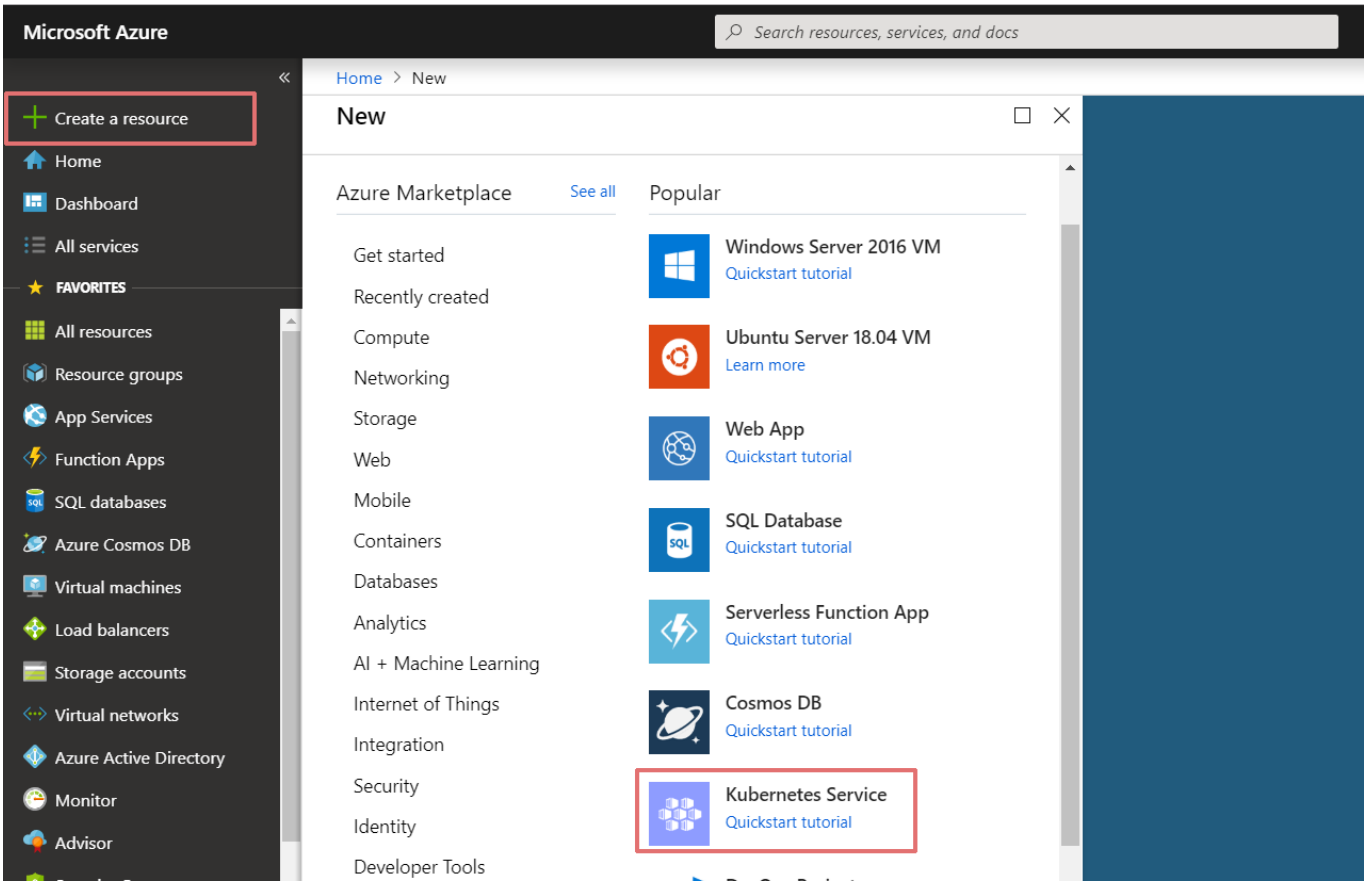
50 minutes

Before you begin

1. Sign in Portal Azure and follow the instructions

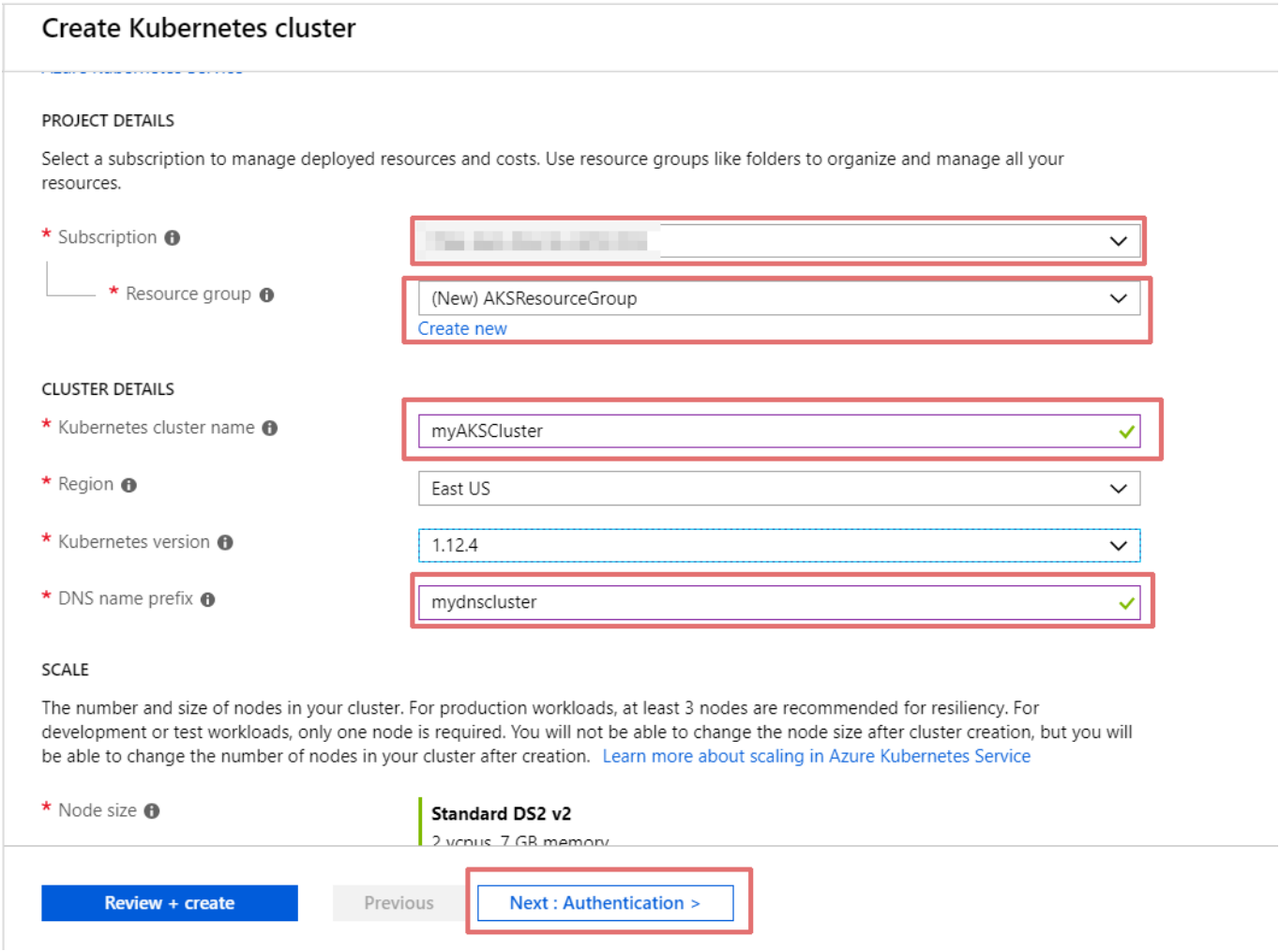
Exercise 1: Create an AKS Cluster

1. First click on **Create a resource** then click on **Kubernetes Service** button to initiate the configuration



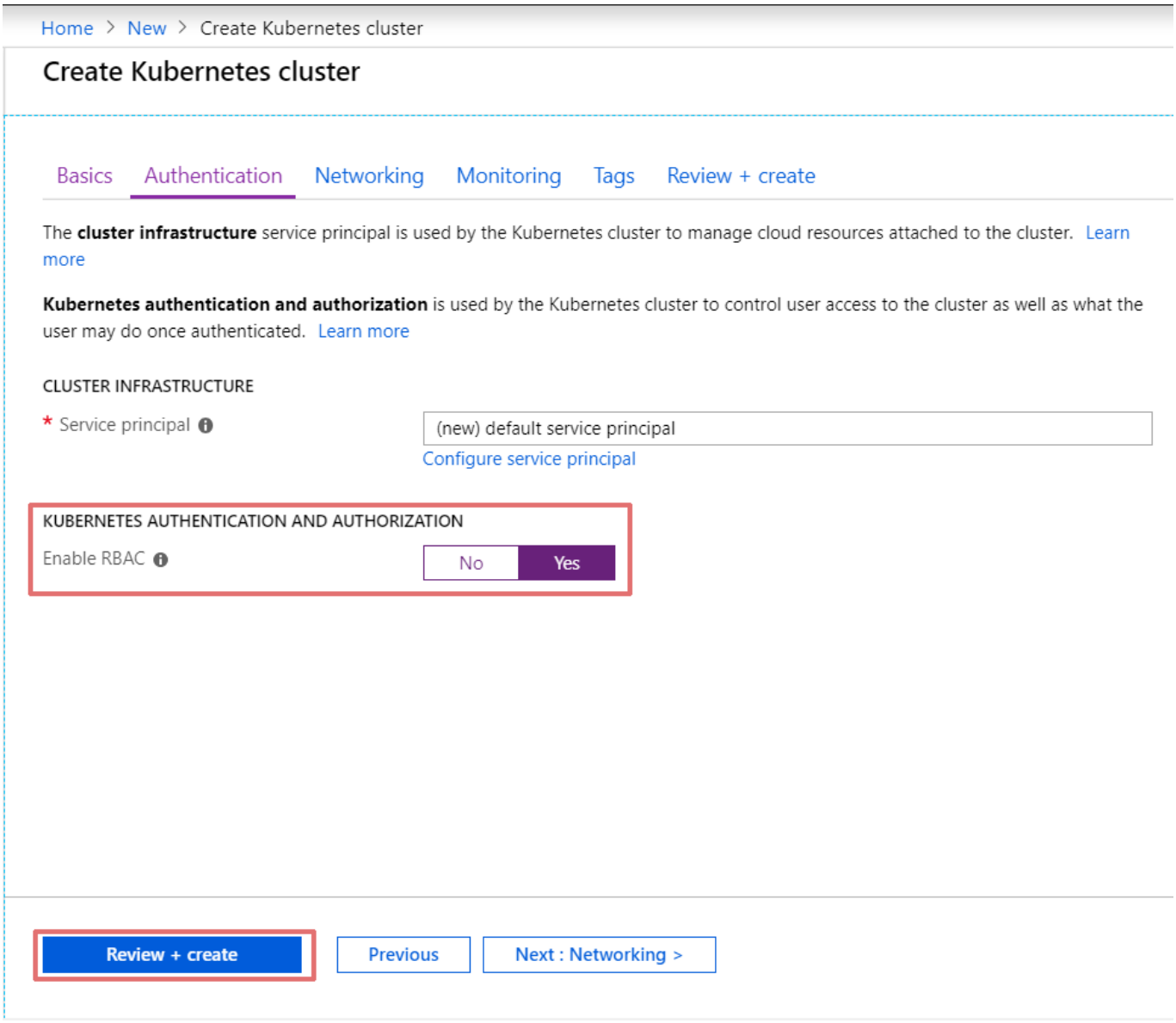
2. Set the next options in **PROJECT DETAILS** and **CLUSTER DETAILS** sections and then click on **Next: Authentication >**

    - Subscription
    - Resource group: Select the Module-03-XXXXX resource group, where XXXXX is the number generated for this lab
    - Kubernetes cluster name
    - DNS name prefix

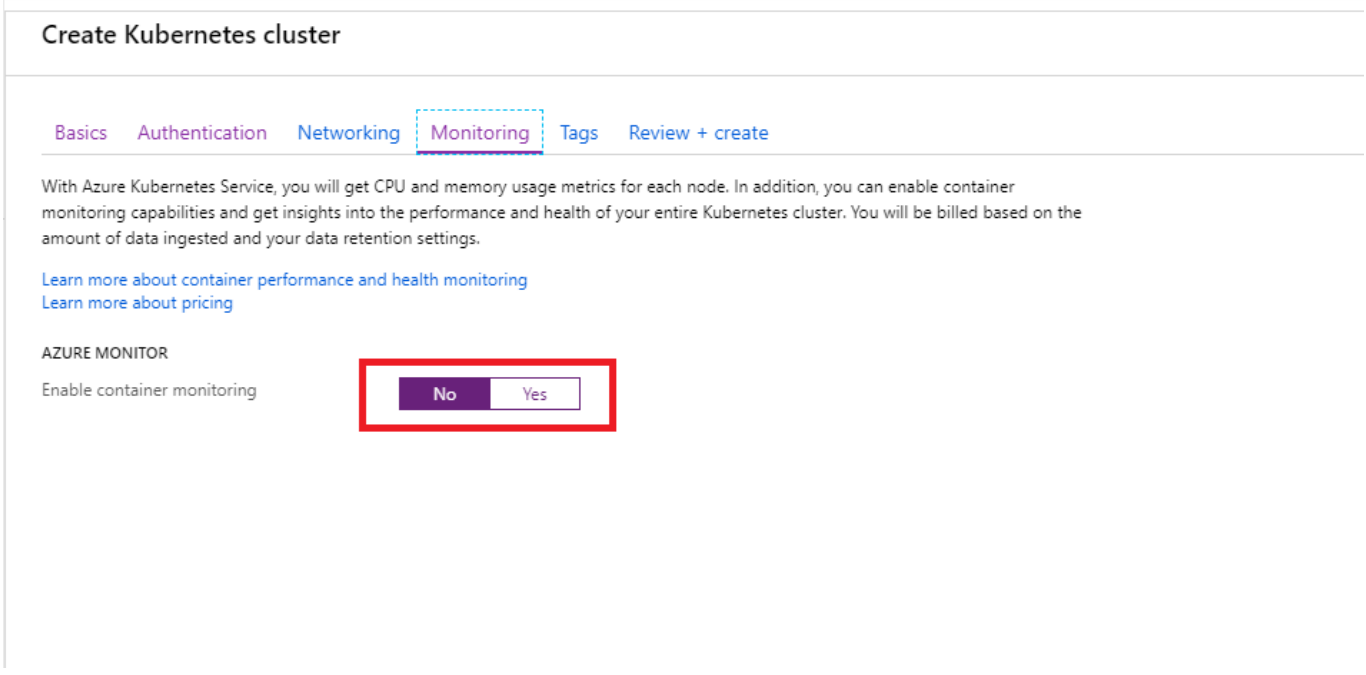


3. Click on **Configure service principal** then check the **Use Existing**, On Service principal client ID, enter the Application/Client ID obtained for this lab, and in the Service principal client secret, enter the Application Secret Key obtained for this lab, then click on **Ok**

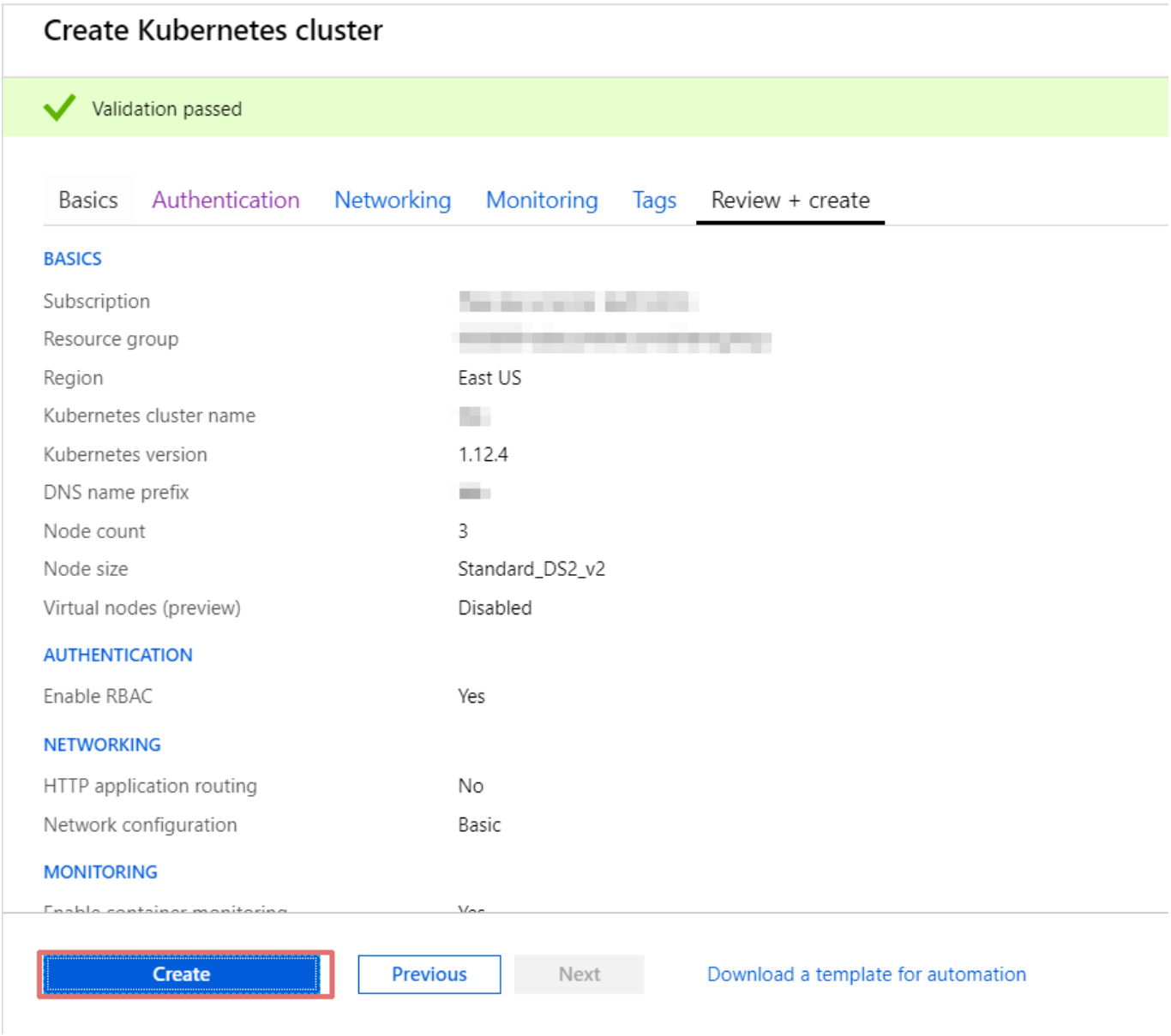
4. click on **Yes** on **Enable RBAC** option for Kubernetes role-based access controls (RBAC)



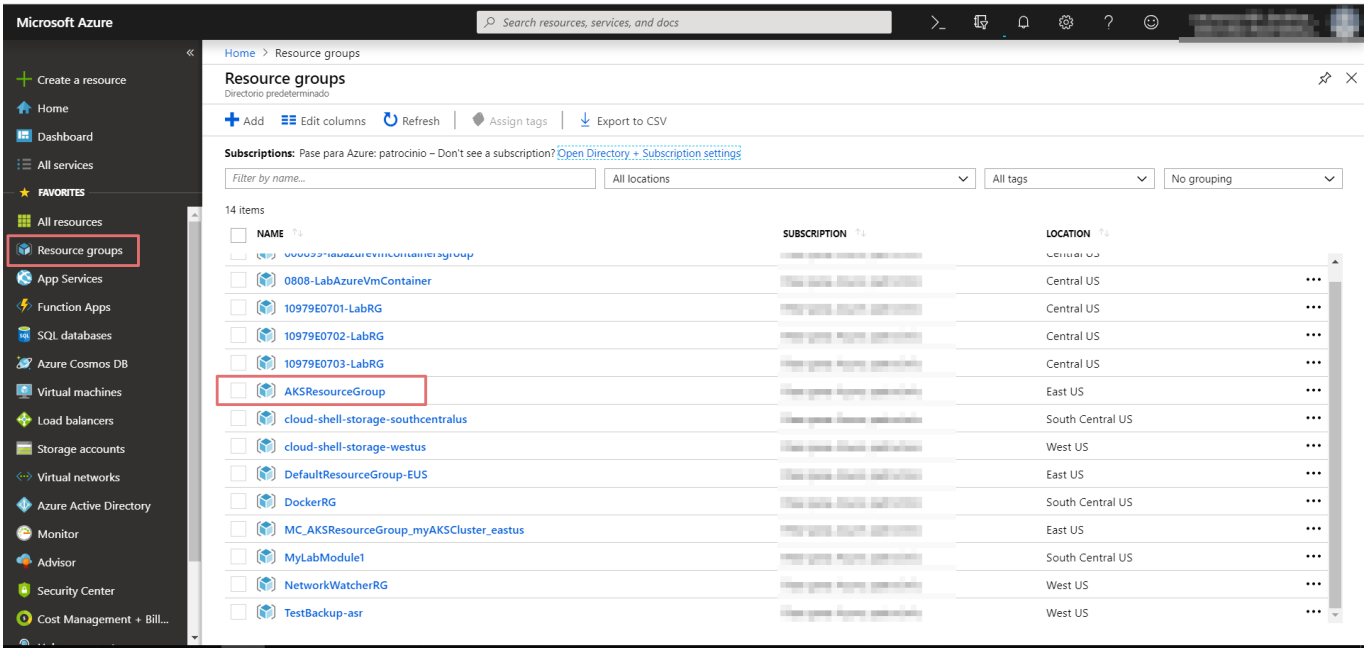
5. Go to Monitoring Tab and Set No for Enable container monitoring



6. click on **Review + create**, after Azure makes the review click on create

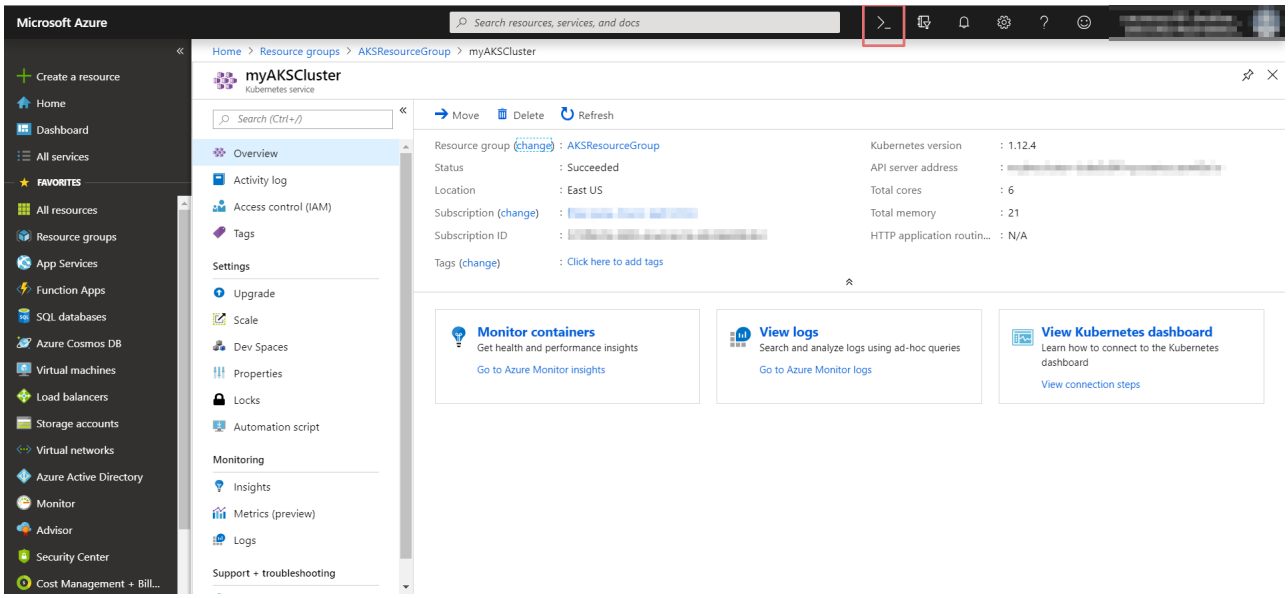


note It takes a few minutes to create the AKS cluster and to be ready for use. When finished, browse to the AKS cluster resource group, such as Module-03-XXXXX, and select the AKS resource, such as myAKSCluster. The AKS cluster dashboard is shown.



###task 2: Connect to the cluster

1. Click on the marked icon in red to open Cloud Shell



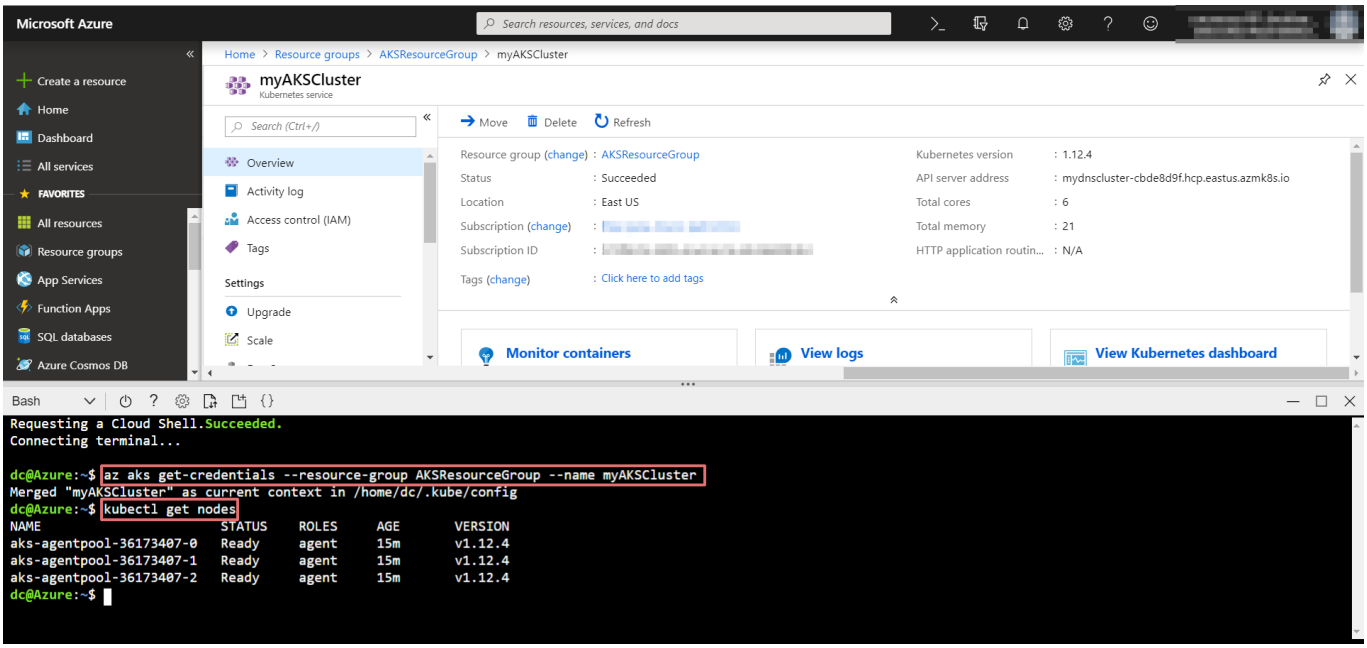
2. Write the next command to obtain the credentials to your Kubernetes cluster, replace the XXXXX on the resource group to match the with the number generated for your lab, and replace the myAKSCluster with the name you specified on the past task.

```
az aks get-credentials --resource-group Module-03-XXXXX --name myAKSCluster
```

3. Write the next command to configure kubectl to connect to your Kubernetes cluster

```
kubectl get nodes
```

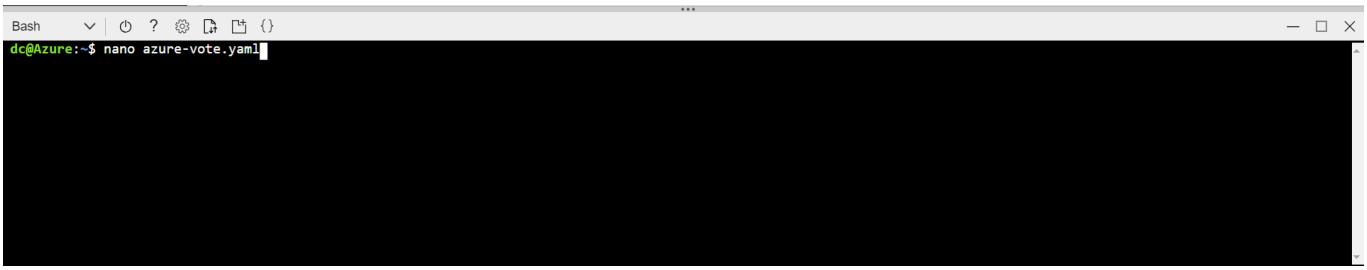
note This command downloads credentials and configures the Kubernetes CLI to use them



Exercise 2: Run the application

1. Write the next command to create a new file named **azure-vote.yaml**

```
nano azure-vote.yaml
```



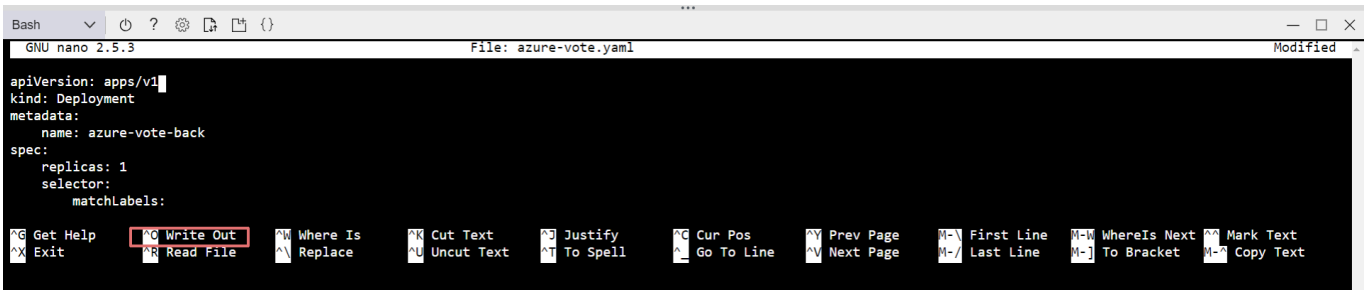
note you can use **nano** or **vi** to create the file

2. Copy the next content and paste in your new file

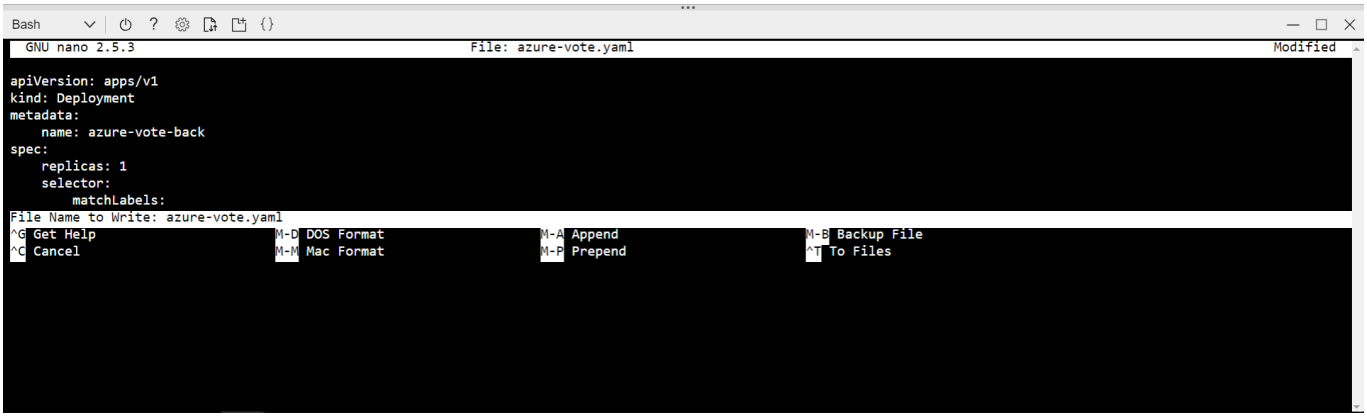
```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: azure-vote-back
spec:
  replicas: 1
  selector:
    matchLabels:
      app: azure-vote-back
  template:
    metadata:
      labels:
        app: azure-vote-back
    spec:
      containers:
```

```
      - name: azure-vote-back
        image: redis
        resources:
          requests:
            cpu: 100m
            memory: 128Mi
          limits:
            cpu: 250m
            memory: 256Mi
        ports:
        - containerPort: 6379
          name: redis
---
apiVersion: v1
kind: Service
metadata:
  name: azure-vote-back
spec:
  ports:
  - port: 6379
  selector:
    app: azure-vote-back
---
apiVersion: apps/v1
kind: Deployment
metadata:
  name: azure-vote-front
spec:
  replicas: 1
  selector:
    matchLabels:
      app: azure-vote-front
  template:
    metadata:
      labels:
        app: azure-vote-front
    spec:
      containers:
      - name: azure-vote-front
        image: microsoft/azure-vote-front:v1
        resources:
          requests:
            cpu: 100m
            memory: 128Mi
          limits:
            cpu: 250m
            memory: 256Mi
        ports:
        - containerPort: 80
        env:
        - name: REDIS
          value: "azure-vote-back"
---
apiVersion: v1
```

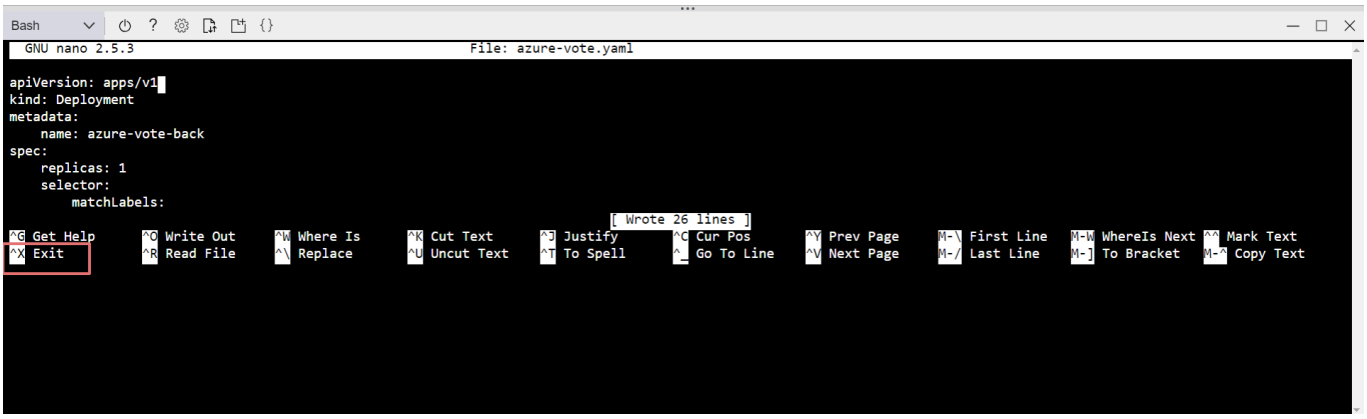
```
  kind: Service
  metadata:
    name: azure-vote-front
  spec:
    type: LoadBalancer
    ports:
    - port: 80
    selector:
      app: azure-vote-front
```



2. Press ctrl+O



3. Press Enter



4. Press ctrl+X

5. Type the next command to deploy the application

```
kubectl apply -f azure-vote.yaml
```

```
dc@Azure:~$ nano azure-vote.yaml
dc@Azure:~$ kubectl apply -f azure-vote.yaml
deployment.apps/azure-vote-back unchanged
service/azure-vote-back created
deployment.apps/azure-vote-front created
service/azure-vote-front created
dc@Azure:~$
```

note When you finish this exercise your application will be deployed

Exercise 3: Test the application

1. Run the next command to monitor the progress

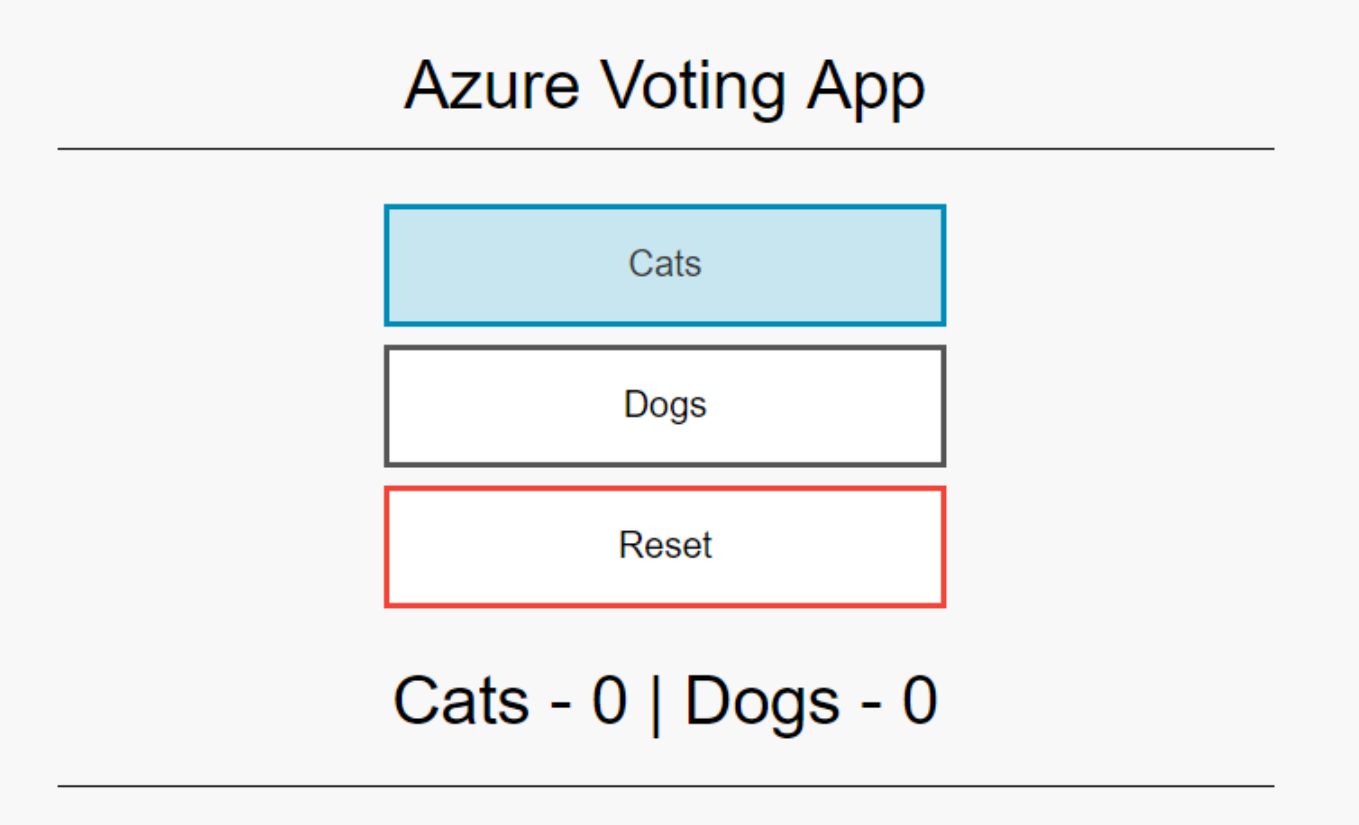
```
kubectl get service azure-vote-front --watch
```

```
dc@Azure:~$ kubectl get service azure-vote-front --watch
NAME               TYPE           CLUSTER-IP    EXTERNAL-IP     PORT(S)        AGE
azure-vote-front   LoadBalancer   10.0.22.149   40.121.95.100   80:31149/TCP   3m
```

note If **EXTERNAL-IP** is **pending** wait until changes to an actual **public IP**

2. When the **EXTERNAL-IP** address changes from pending to an actual public IP address, use `CTRL+C` to stop the **kubectl** watch process

3. Enter in your browser and enter your external-IP and you'll see your service running



note your application is now online

4. Close the Cloud Shell Window.

End of the lab